1.5 (part 2) check even answers:

90. $x = -4$ only

x = 2 makes the fraction undefined

so it is an extraneous solution

98. x = 4 only (x = 1 is extraneous)

1.5 (part 2) check even answers:

104. factor $\rightarrow$ $(x^2 - \quad)(x^2 - \quad) = 0$ SHOW WORK!

then solve $\rightarrow$ $x = \pm 2$

$x = \pm 1$

106. factor $\rightarrow$ $(x^3 - \quad)(x^3 + \quad) = 0$ SHOW WORK!

then solve $\rightarrow$ $x = \sqrt[3]{3}$

$x = -1$

1.6 Notes: Complex numbers

$a + bi$

real # imaginary #

Reminders:

a. $\sqrt{-1} = i \rightarrow \quad therefore \quad i^2 = -1$

b. $\sqrt{-9} = \sqrt{9} \bullet \sqrt{-1} \quad = 3i$

c. $(3i)^2 = \quad 3^2 \bullet i^2 = 9(-1) \quad = -9$

1.6 Notes: Reminders

d. $\sqrt{-25} = 5i$

ONE solution since the primary root is already given

TWO solutions since root is being applied to equation

e. $x^2 + 25 = 0$

$x^2 = -25$

$x = \pm\sqrt{-25}$

$x = \pm 5i$

1.6 → today's assignment

Evaluate and write in the form $a+bi$

23. $\left(7-\frac{1}{2}i\right)-\left(5+\frac{3}{2}i\right)$

Don't multiply…just subtract like terms!

$$=7-5-\frac{1}{2}i-\frac{3}{2}i$$

Gather like terms

$$=2-\frac{4}{2}i \quad \rightarrow \quad =2-2i$$

Simplify to get a + bi form

1.6 → today's assignment

Evaluate and write in the form $a+bi$

30. $(5-3i)(1+i)$

$= 5 + 5i - 3i - 3i^2$

$= 5 + 2i + 3$

$= \boxed{8+2i}$

38. $\dfrac{1}{1+i}$ Use conjugate

$= \dfrac{1-i}{1-i^2}$

$= \dfrac{1-i}{1+1} = \dfrac{1-i}{2}$

$= \boxed{\frac{1}{2} - \frac{1}{2}i}$

1.6 check even answers:

30. $8+2i$

38. $\frac{1}{2}-\frac{1}{2}i$

24. $-6+6i$

40. $\frac{11}{25}-\frac{23}{25}i$

54. $\frac{9}{4}i$